11

SPECIFICATIONS

FOR A

STEAMER

FOR THE

AMERICAN STEAMSHIP COMPANY.

SPECIFICATIONS.

Length from main or inner stern post to stem, 325 feet.
Breadth, (extreme,) . . . 43 feet, 9 inches.
Depth of hold, ... 29 feet.

Depth divided as follows:

Lower hold, ... 13 feet.
Lower, between decks, ... 8 "
Upper, between decks, ... 8 "

In conformity to a model, to be furnished by the Company.

To have three masts, with suitable spars complete, including iron work and blocks of the best kind as per Specifications.

A lower, main and upper deck, with such houses on the upper deck as may be required, viz., pilot house, officers' rooms, dining saloon, galley, covering to passage ways, store rooms, water closet, &c., as per Specifications.

Cabin to be below the upper deck, and to accommodate fifty first class passengers, and seventy-five second class passengers, as per plans.

Keel,

Of white oak or maple, sided 16½ inches, and moulded 17 inches, scarfs ten feet long, and bolted with 1-inch copper, six bolts in each scarf, and riveted.

Shoe,

Of white oak, in thickness 3 inches, in lengths of 12 feet, put on with composition spikes 7½ inches long, and also to be tree-nailed as usual, diagonally. Yellow metal to be placed between the shoe and keel.

Stem,

Of white oak, to side 16½ inches, or same as keel, moulded not less than 9 inches clear of the rabbet, scarf on the keel 4½ feet long, fastened with four 1-inch copper bolts, and two bolts in each nib ¾-inch. Stem bearded to 5 inches in the front of gripe, which shall extend out with the lines of the ship without break.

Apron,

Of white oak, sided 16½ inches, or same as stem, bolted to the stem with 1⅜-inch refined iron and copper bolts, 20 inches apart.

Stern Post,

Sided at shaft 40 inches, at keel 16½ inches, or same as keel, at head 16½ inches, or satisfactory to the supervising engineer. After deadwood framed in the strongest manner, similar to a sketch to be furnished.

Rudder Post,

Of white oak, not less than 3 feet fore and aft, including bearding, sided 21 by 36 inches, at the head, and 16½ by 36 inches at the keel, to be made in two pieces and dowelled and tabled together, bolted with 1¼ and 1⅛-inch refined iron. Composition straps, securing rudder post to main post and keel, to be part of engine contract. These straps are of the same width as the keel, running on each side from rudder post to 5 feet forward of the inner post, also extending up on rudder post 3 feet, and on inner post as far as the jacket, bolted through and through with 1¼-

inch copper. Similar straps secure the heads of the rudder and inner stern post.

Rudder,

Of wood, white oak stock, with five sets of pintles and braces, 4 inches wide, diameter of pintles 4 inches, all to be secured in the most thorough manner, and to the satisfaction of the inspector. Rudder head in diameter, 21 inches, to come above the upper deck, and fitted with an iron tiller and steering apparatus of the most approved kind.

Frame,

Of white oak and hackmetac; floor to be all of white oak, top timbers to be of white oak and hackmetac, every alternate timber of each.

Floors,

Of white oak, moulded 18 inches in the throats, frame to mould 12 inches at the turn of the bilge, and 8 inches at the top height. Floors to side from 12 to 15 inches, to be filled in solid. Lower futtocks to side 12 inches, all other timbers to side $9\frac{1}{2}$ and 10 inches; length of floor 24 feet 6 inches; frame to be filled in solid to the turn of the bilge from the stem to the stern post. Fillings of white pine or white chestnut, to be caulked or wedged outside, and wedged inside. Floors to be bolted to the keel with $1\frac{1}{8}$-inch refined iron, one bolt in every floor.

Stanchions,

Of white oak, one on every frame, free from defects, sided 10 inches, and finished without ceiling; where the stanchions are covered with bulwarks at the forward and after end, they may be of hackmetac or white oak, say one-third hackmetac, two-thirds white oak. Each pair of cants will be secured to deadwood with iron bolts of $1\frac{1}{4}$ and $1\frac{3}{8}$-inch refined iron driven through and through, and riveted.

Frames.

Rooms for 180 feet; amidships 28 inches, at the ends 32 inches, timbers to come close together, and dowelled with 3-inch locust or white oak dowels, bolted together with 1-inch iron, 3 bolts in each scarf which must average 5 feet in length throughout the ship. Frames will be bridged with seasoned white oak chocks, let in between the frames at every butt above the fillings. Timbers in the make of the rigging and side lights to be filled in solid, if required.

Stringer Plate,

Of iron 6 inches by $\frac{3}{4}$ inch; to be placed at the centre of first strake of the upper deck clamps, extending fore and aft the ship. Butts double riveted by lap pieces let into the timbers.

Iron Braces, (diagonal,)

Of American iron $4\frac{1}{2}$ by $\frac{3}{4}$ inches, put on the inside of the frame, the upper ends on every other frame to be about 5 feet apart and secured to stringer plate.

The first tier to be let into the timbers tending upwards from amidships each way; the second tier letting into the ceiling tending downwards and acting as ties, hot riveted together at the crossings between the frames; let the lower ends of the braces connect with the long floors, which must extend from bilge to bilge, diameter of bolts one inch, every bolt through and riveted on the outside of the frame. There must be one bolt in each timber. The stem must have braces outside of the timbers, two in number, acting as ties, iron $4\frac{1}{2}$ by $\frac{3}{4}$ inches—these braces on the outside must extend from the stem at the keel to the top of the ship or stringer plate at an angle of 45 degrees—aft there must be four braces, about 3 feet apart, of iron $4\frac{1}{2}$ by $\frac{3}{4}$ inches, extending from deadwood and stern keee under the shaft box to stringer plate, at an

angle of 45 degrees—all bolted through every timber with 1-inch iron and riveted. Stringer plate and braces to be painted with a good coat of red lead before they are put in. The after part of the three decks to be diagonally strapped with iron 4 by $\frac{1}{2}$ inch, placed across and let into the beams and carlines under the deck plank—the ends to be bolted to the timbers, and one bolt through each beam and carline riveted, bolts 1 inch in diameter—upper deck to have 8 straps and each of the lower decks 6 straps. An iron strap $4\frac{1}{2}$ by $\frac{3}{4}$ inches shall extend around from side to side under the counter (running as far up the sides as possible) and to be bolted with 1-inch iron to every timber.

Main Keelsons,

Of white oak, in two depths, sided $16\frac{1}{2}$ inches by 16 inches deep each. Scarfs 8 feet, lock-scarfed, each keelson to be bolted separate, lower tier with one $1\frac{1}{4}$-inch bolt in every frame, top tier with one $1\frac{3}{8}$-inch bolt in every frame. All bolts to be of refined iron, to be driven through the floor and within an inch of through the keel.

Sister Keelsons,

Of pitch pine, one each side of main keelson, sided 16 by 18 inches; to be square bolted in every timber with $1\frac{3}{8}$-inch refined iron, half the bolts to be riveted on the timbers, the other half to go down through the first garboard strake within two inches of the outside. Horizontal bolts of $1\frac{1}{4}$-inch through main keelson in every frame, and riveted.

Bilge Keelsons,

Of white oak and pitch pine to go over the heads of the short floors on each side. One strake of white oak, sided 18 by 15 inches, four strakes of pitch pine sided 15

by 15 inches amidships, gradually tapering forward and aft, square fastened with $1\frac{1}{4}$-inch bolts in every timber, half driven blunt and the other half driven through and riveted on the timber. All scarfs to be 5 feet. Under the engine, and aft to the stern, to be filled in solid between sister and bilge keelsons with 10-inch pitch pine, square fastened with 1-inch iron in every timber, driven blunt.

Also to be filled in forward as far aft as the coal bunkers, with 8-inch pitch pine, square fastened with 1-inch iron driven blunt in every timber. Eight strakes in the bilges above the 15 inches, to be of pitch pine 12 by 12 inches square bolted with $1\frac{1}{4}$-inch iron, half driven blunt and half from planking and riveted on the inside; above this to the deck (5 strakes) to be of pitch pine, 8 inches thick, bolted with $1\frac{1}{8}$-inch iron, half driven blunt and half from planking and riveted on the inside. All to be edge-bolted every 5 feet with $1\frac{1}{8}$-inch iron on the 15-inch strakes, and 1-inch on the 12-inch strakes.

Boiler and Engine Keelsons.

Boiler keelsons each side of ship between sister and first bilge keelson, which is to be of pitch pine, height of main keelson 15 inches, fastened every frame with $1\frac{1}{4}$-inch iron. Engine cross keelsons, three in number, each 2 feet wide and three feet high, above sister keelson, bolted every 2 feet with $1\frac{1}{4}$-inch iron, or all the above fastening and shaft bearing, and cross keelson, to be as the engineer of machinery may direct.

Deadwood,

Forward and aft, of white oak, to side $16\frac{1}{2}$ inches. Stern post knee to fay on the keel, and against stern post, bolts $1\frac{1}{4}$ and $1\frac{3}{8}$-inch copper and iron, to be well secured, to the satisfaction of superintendent. Knee coaked to the keel, and all deadwoods coaked to each

other; length of coaks 3 inches and to be round. Deadwood aft to side the same as the stern post at the height of the shaft, above and under shaft box 24 inches, so as to admit fastening each side of shaft; the lower piece to extend forward at least 20 feet from forward end of shaft-box. Deadwood bolts, longest $1\frac{3}{8}$ inches and shortest $1\frac{1}{4}$ inches in diameter, and fastened in the best manner. Shaft tube of white oak, and side 36 inches square, having the seam up and down, where it is put together, with seasoned locust dowels 3 inches, to be round and bolted through each dowel, with $1\frac{1}{8}$-inch iron every 20 inches, or satisfactory to engineer. The main stern post must not cut off the deadwood, but be tenoned into it. The counter timbers must come down on each side of the deadwood, and extend over the head of main stern post. Counter timbers to be of white oak, sided 12 inches and secured to deadwood and rudder post by $1\frac{1}{4}$-inch iron bolts. The space abaft the rudder must be fitted in between the counter timbers of white oak, and extend below moulding edge the thickness of the plank which will butt against it. Stern knee to be bolted with two metal bolts through the post and two through the keel, $1\frac{3}{8}$ inch and riveted, also $1\frac{3}{8}$-inch iron bolts driven blunt into keel and stern post every 18 inches.

Lower Deck Clamps,

Of white oak or hard pine, in thickness 8 inches, and square fastened with $1\frac{1}{8}$-inch iron half driven blunt and half from timbers and riveted on the inside.

Lower Deck Beams,

Of white oak or hard pine, 15 by 15 inches amidships, $11\frac{1}{2}$ to 12 inches at the ends, deck beams let into clamps 1 inch and fastened at the ends with $1\frac{1}{8}$-inch iron bolts, two in each end of every beam, driven one half way through second strake of clamps. The ends of each beam

to have a jog for the waterway to lay on and lockstrakes next to the waterway for it to go against. The beams next to the engines and boilers to be sided 18 inches (5 beams on each deck) space between beams not more than 5½ feet.

Lower Deck Waterways,

Of hard pine or white oak, 15 inches square, tapering to 13 inches at the ends; scarfs 8 feet long. Waterways bolted to the beams with 1⅛-inch iron and through the side in every timber with 1⅛-iron, one half driven blunt and half from outside, and riveted on the waterway.

Deck, Thick Strakes next the Waterway,

Of hard pine, two in number, 9 by 12 inches. First strake bolted through every frame and into beams with 1⅛-inch iron driven blunt; second strake bolted to waterway through every frame and coaked to beams with 3-inch coaks and 1⅛-inch iron, the second strake bolts to be driven from outside and riveted on the inside.

Thick Strakes above the Waterways.

One strake of white oak or hard pine, 12 inches thick in the lower between decks, 10½ inches in the upper between decks, fastened with 1⅛-inch iron in both strakes. Fastening in thick strakes, one half driven from inner course of inside planking and riveted on inside, and half driven blunt, edge bolted every 4 feet with 1⅛-inch iron. Ceiling in the lower between decks between clamps and thick strakes, if of white oak 7-inch, or pitch pine 7½ inches thick, fastened with 1-inch iron, ceiling in the upper between decks between clamps and thick strakes 5 inches, of white oak or hard pine, fastened with ⅞-inch iron.

Hooks and Pointers.

There must be one hook at each end of each deck, and one between decks at each end. In the hold forward,

three or more diagonal pointers connected by hooks at the keelson and extending aft up to the beams, to have chocks across them running from beams down to keelson, all fastened from the outside with $1\frac{1}{8}$-inch iron,—aft in the hold to have three diagonal pointers as described above. Hooks in hold to side one foot,—the between decks to side one foot,—upper deck and all deck hooks to side as the deck frame will allow, or as may be otherwise directed.

Lower Deck Carlines,

Of hackmetack or hard pine, carlines 6 by 10 inches in three ranges. Ledges 5 by 10, deck fastenings not more than three feet apart.

Lower Deck Knees, (hanging,)

Of hackmetac or white oak, siding from 14 inches to 12 inches, fastened with sixteen $1\frac{1}{8}$-inch bolts, the bolts in the points of the knees $\frac{7}{8}$ inch; bolts in the body to be driven from the timbers and riveted on the knee; at the junction of beam and clamp the corner of knees shall be cut off for two inches to allow ventilation.

Lodge and Lap Knees,

For two lower decks, of hackmetac, to side $7\frac{1}{2}$ or 8 inches, fastened with $1\frac{1}{8}$-inch iron, one bolt in each timber, and in the arms not less than four bolts, two of these bolts in the arm to be driven through both knees and beam and riveted on each side.

Mast and Hatch Partners,

For two lower decks. Mast Partners of white oak or hard pine 5 feet wide and 14 inches deep, and kneed to beams, hatch partners of white oak 10 by 12 inches, finished three inches above the deck, to be kneed throughout the ship with hackmetac knees, sided from 5 to 6 inches, fastened with $\frac{7}{8}$ and 1-inch iron. Combings and

head ledges of white oak 5 by 8 inches and fastened with galvanized iron spikes and plugged.

Boiler and Engine Hatches,

To be framed as engineer shall direct, kneed against the partners with 6 and 7 inch knees and fastened with $\frac{7}{8}$ to 1-inch iron.

Mast Step for Mizzen Mast,

Of white oak, extending over two beams, of suitable size and secured with lodge and lap knees fastened with 1-inch iron and shored each side of shaft alley from ceiling.

Deck Plank,

For two lower decks, of white pine, to be clear of sap and knots, $3\frac{1}{2}$ by 6, fastened with iron spikes, one in each carline, and two in each beam and each butt. Spikes to be of suitable size.

Main Deck Clamps,

Of white oak, 7 inches thick, or pitch pine, 7 inches, fastened with 1-inch iron, to make square fastening, one-half driven blunt, and one-half from timbers, and riveted inside. An air strake 4 inches wide, under the clamp, fore and aft, to be left open; chocks back of the hanging knees must not go to the timbers by 1 inch.

Main Deck Knees, (hanging,)

Of white oak or hackmetac, siding from 10 to 12 inches, fastened with 1 and $1\frac{1}{8}$-inch iron bolts, and riveted, to have not less than sixteen bolts in each knee. Bolts through the body must be driven from the outside, and riveted on the knee; bolts through the arm must be riveted on the beam before laying thick strakes, or else driven through the thick strakes and riveted on the knee. At the junction of beam and clamp, the corner of hanging knee shall be cut off 2 inches, to allow ventilation.

Lodge and Lap Knees, Main Deck,

Of hackmetac, to side 7½ or 8 inches, fastened with 1⅛-inch iron, one bolt in each timber, and in the arms four or five bolts, two of the bolts in the arms to be drawn through both knees and beam, and riveted on each side.

Stanchions under Beams,

Of white oak, sided 8 by 24 inches, and extending from the keelson to the main deck, clamping the lower deck beam, and bolting through the same with two ⅞-inch bolts, and riveted. Secured to keelson with a strake of white oak or pitch pine, 7 by 12 inches, securely bolted on each side of stanchions, which are let into the strakes with a dovetail flush with keelson, leaving a space between of 2½ inches for salt, and an iron strap over the head of each stanchion and main deck beams, 3½ by ½ inch, to extend far enough down on stanchions to take two bolts through the stanchion of ⅞-inch iron and clinched, also two bolts of same size through beam.

Main Deck Waterways and Beams,

Of hard pine of the same size and bolted in the same manner as those of the lower deck. Strakes next the waterway as in lower deck. Main deck beams, carlines, ledges, hatch and mast combings, deck plank, same as in lower deck.

Upper Deck Clamps,

Of white oak or pitch pine 5½ inches thick, two strakes each 12 inches wide, square fastened with 1-inch iron.

Ceiling,

Between clamps and thick strakes of white oak or pitch pine 5½ inches thick, secured by ⅞-inch bolts. All spikes about the ship above the light water line to be plugged.

Upper Deek Beams,

Of white oak or hard pine, 9 by 14 inches, secured at ends with two $\frac{7}{8}$-inch iron bolts, in each end, driven into clamps.

Upper Deck Knees,

Of hackmetac, sided 7 inches for lodging and lap knees and 10 inches for hanging knees. Lodging, lap and hanging knees to be placed at each end of each beam and fastened the same as those of the main deck. In the cabin the hanging knees must be of iron of suitable size.

Upper Deck Carlines and Ledges,

Of hackmetack, in two ranges, 6 by 8 inches. Ledges 5 by 8 inches.

Upper Deck Plank,

Of white pine, clear of sap and knots, $3\frac{1}{2}$ by 5 inches, fastened with galvanized iron spikes of suitable size, one in each carline, two in each beam and butt.

Upper Deck Waterways,

Of white pine, 12 inches square, edge bolted with 1-inch iron and plugged, every timber ; as the deck drops forward and aft the waterway must increase in depth, and oak spirketting work placed under side of the planksheer 3 inches thick and fastened with 6 inch galvanized iron spikes, and plugged.

Stanchions between Decks,

Of white oak turned, 9 inches in diameter, with suitable caps and shoes of cast iron, to be galvanized, and secured with screws, also to be diagonally bolted, two 1-inch bolts in each end driven into beams. Stanchions in the cabin to be omitted, as the bulkheads will be sufficient.

Planksheer,

Of hard pine, in thickness 6 inches, bolted with $\frac{7}{8}$-inch iron bolts, inside bolts to extend down through the waterway and into the clamp and knee, one in each carline and one into each beam. Outside the same number of bolts, to extend down through two strakes of outside planking, also two bolts through each stanchion to inside, and plugged.

Ventilation.

The next strake under the main clamps must be an air strake 4 inches wide fore and aft, also strake left out fore and after ends across the cants under the thick strakes to extend well forward and aft. Strakes will also be left out of the decks under the deck houses, and ventilators built wherever they can be, forward and aft, coming up at the sides of the houses on deck. Ventilators must be put into the planksheer, and be placed fore and aft in the openings between the frames, or as may be directed by the superintendent. At the junction of the beam and clamp the corner of hanging knees shall be cut off 2 inches, also the corner at the upper end of tressel work, where it joins hanging knees, to allow ventilation.

Tressel Works for the two Between Decks,

Cross ties of white oak 5 by 10 inches, for thirty-five rooms between the hanging knees, on each side of both decks, the same are to be bolted with fourteen $\frac{7}{8}$-inch iron bolts, driven from the outside, where they can be, to clear the iron braces and other fastening, and to be riveted on the inside on iron rings.

Rails,

Of hard pine, 6 inches thick, 17 inches wide, also two strakes 4 by 12 inches, under the rail (one each side of the stanchions) the stanchions being let into them 1 inch, fastened with two $\frac{7}{8}$-inch bolts in each stanchion; the

main rail fastened through these strakes and pin rail on each side every two feet with $\frac{7}{8}$-inch iron. Scarfs 7 feet long. Pin rails under the above strake to be white oak, 5 by 10 inches and bolted in every stanchion with $\frac{3}{4}$-inch iron, to be covered with brass on the inside edge. Monkey rail of white oak, $3\frac{1}{2}$ by 5 inches, 18 inches high or as may be required, suitably fastened to the rail.

Bulwarks,

$2\frac{1}{2}$ inches thick, of white pine amidships, oak at the ends, both forward and aft, fastened with galvanized iron spikes, and plugged. Such ports to be made as may be required.

Monkey bulwarks of suitable thickness. All of the above to be pannelled between the stanchions. To have eight chocks of white oak on each side for fasts, to be of a suitable size and properly fastened.

Upper Deck Hatch Combings,

Of white oak, sided 9 inches, with suitable hatch partners of white oak. Mast partners 10 inches thick, to work above the deck. Hatch combings 10 inches above the deck.

Mast Partners,

Kneed with $5\frac{1}{2}$ inches knees, fastenings in hatch combings to be 1-inch iron, in knees $\frac{7}{8}$-inch iron.

Housesills,

Of hard pine, 10 by 13 inches and scarfed, fastened to every beam with two bolts and to every carline with one bolt, all of 1-inch iron. Sills to extend from aft to forward under the forecastle as may be decided by the Company.

Forecastle Deck,

To extend from forward aft not over 75 feet, at option of the Company, far enough to furnish accommodations for the ship's company, water closets, &c. To have a suitable number of beams of white oak or hard pine (after-beam to be of white oak) 7 by 10 inches, to be fastened into clamps with two bolts in each end and also into the fore and aft timbers the same, $\frac{7}{8}$-inch iron; a timber of hard pine 7 by 10 inches shall run fore and aft each side of the bowsprit and pall bitts, and bolted to the same with $1\frac{1}{8}$-inch bolts, two in each bitt; also to have suitable hanging and lodging knees where practicable, securely fastened with $\frac{7}{8}$-inch iron. Deckplank to be the same and fastened in a similar manner as top of the house. All of the above to be satisfactory to the superintendent.

Poop Deck,

To extend from aft, forward as far as may be required, to be suitably constructed in a manner somewhat similar to the forecastle deck and satisfactory to the superintendent.

Wooden Bitts,

For bowsprit, windlass, and whatever else may be required, of suitable size, and properly fastened.

Iron Bitts,

For making ship fast, to have five double bitts on each side, of the following dimensions, viz., 26 inches high, 33 inches from centre to centre, smallest part 9 inches, top 14 inches, base 2 inches thick, 5 feet long, also two of the same size on the forecastle—also four on the forecastle, and two on the poop deck for anchors, &c., 16 inches high, from centre to centre 22 inches, smallest part 7 inches, top 10 inches, base $1\frac{3}{4}$ inches thick, and $3\frac{1}{2}$ feet

long; the largest to be bolted with eight bolts, each secured with screw nuts underneath, to suitable foundations of white oak; the smaller to be secured the same, with the exception of six bolts instead of eight. Bolts $1\frac{1}{4}$-inch iron.

Ports,

For cargo and coal ports, with such other openings as may be required in the sides, to be properly framed with sills dovetailed into the frames of the ship, cutting off as few frames as is possible. Air ports to be spaced and have a solid filling between the frames, spaced and marked previous to laying out iron bracing, so as not to cut off the same for a port, to be raised as may be necessary.

Joiners' Work,

To be in accordance with a plan, and similar to the steamers of her size and class, complete except plumbing.

Garboards,

Of white oak; first strake, 12 inches thick, second, 8 inches thick, third, $7\frac{1}{2}$ inches thick, fourth, 7 inches thick. Scarfs of garboard strake in length, 6 feet, bolts $\frac{7}{8}$ and 1 inch; first strake bolted edgewise through the keel every 5 feet; $1\frac{1}{8}$-inch iron bolts, also two bolts into every timber, set in $2\frac{1}{2}$ inches and plugged, the three other strakes to be bolted into every timber same as above, and plugged.

Bottom Plank,

Of white oak. Bottom to be double planked from lower wale down to the upper strake of the garboard; the inside plank to be $3\frac{1}{2}$ inches thick, and to be fastened on with iron spikes sufficient to draw the plank to the timbers, and with through locust tree nails dipped in varnish, and wedged, two in each timber except where bolts come, half of the bolts for the ceiling to be driven through this

planking. Treenails to be driven into lodging knees, waterways and thick strakes 3 or 4 inches where they cannot be driven through. All wide plank on the flat of the floor to be centre treenailed,—the whole to be thoroughly caulked; the outside plank to be 3 inches thick, and to be fastened with two 7-inch composition spikes to each butt, also whenever it is necessary to draw the plank too, two locust treenails, 12 inches long, dipped in varnish and wedged to every timber.

Butt Bolts,

Of copper or composition, 1 inch in diameter, to be driven through and riveted. Care must be taken to mark the braces both inside and out, so as to avoid short fastenings.

Wood End,

Bolts, of copper, $\frac{7}{8}$ inch in diameter, through and riveted; wide plank to have two bolts in each butt.

Bilge Bolts,

Of composition, 1 inch in diameter, about five hundred in number on each side, distributed about the ship as may be directed by the superintendent.

Wales,

Of white oak, 16 strakes; at the plankshear to be 5 inches thick and increase to 6 inches at the fifth strake, thence to bottom plank, to be fastened with one $\frac{7}{8}$-inch bolt through and clinched, one $9\frac{1}{2}$-inch spike, and one through locust treenails dipped in varnish and wedged in each frame—butt spikes to be galvanized—bolts and spikes to be countersunk and plugged.

Chain Plates,

Of galvanized iron, 4 by $\frac{7}{8}$ inches, to extend on the outside of the timbers, stanchions, or wherever practicable,

far enough to put through and through three 1¼-inch bolts, to be finished with an eye, to take the deadeye strap, nine in number on each side for the fore-rigging, and the same number for the main; for the mizzen rigging five on each side.

Windlass.

To have the best Emerson windlass, iron chocks, cleats and cavils, complete; also Brown's patent chain stoppers.

Iron Work.

All iron-work about the rudder and rudder-head, chain compressor, mast rails, hatch plates, to be of suitable size, of the best quality, and galvanized. All iron about the decks for leaders, rigging, &c., must be galvanized.

Capstans.

One aft on the house, and two on the forecastle, (in addition to the capstan with the windlass,) to be of approved pattern and suitable size.

Pumps.

Head and stern force pumps of suitable size, with hose complete, also two 10-inch pumps complete, of the most approved pattern, placed abaft the engine.

Water-Tight Compartments.

One water-tight bulkhead, to extend from bottom of the ship to the second deck, forward of the fore-hatch, to be of pitch pine plank, 4 inches thick by 12 inches wide, put up in a diagonal form, each end of every plank bolted with one ⅞-inch bolt, and one spike into timber and beam—crossed the other way with plank of the same kind and dimensions, secured in the same manner, (thus forming a bulkhead 8 inches thick, two tree-nails in

each plank at the crossing, through and wedged, the ends of the planks secured by cleats, securely spiked into the ceiling and beams—to be thoroughly caulked.

Four water-tight bulkheads and coal bunkers of iron are a part of contract for machinery.

Air Ports.

To have ninety ten-inch air ports, leaded and fitted complete, seventy in the between deck, sixteen in the forecastle, and four in the poop.

Steering Apparatus,

Of the most approved kind, to be furnished by the builders, such as is used on board steamers of this class. To have an iron tiller, of suitable size, in addition.

Iron Boat Davits,

For eight boats, diameter 4 inches, fitted and hung. To have gallows frames for securing boats, and all iron work for the same, including chains.

Cat Heads,

If required, completely sheived with composition sheives and stoppers, and anchor trip. Anchor davits 6 inches in diameter, set in iron shoes on deck and clamped to the rail.

Hawse Pipes,

To be cast of a pattern approved by the superintendent, leaded and fitted complete, including covers and collars inside.

Scuppers,

Six on each side on upper deck, leaded and fitted with composition leaders on the outside, 4 by 6 inches (in the clear) also scuppers for the houses on deck, as may be required.

Caulking,

To be thoroughly done, and satisfactory to the superintendent.

Painting and Glazing,

To be done in a manner satisfactory to the committee, to be painted with three coats, inside and outside.

Work to be Done.

The carpenter is expected to perform all the woodwork in accordance with the above Specification. He will not fit the work for the engineer, who will find his own men.

He will put on the composition plates on the stern, connecting the rudder and stern posts to keel, but will not be expected to furnish the metal. These plates are of the same width as the keel, running on each side from the rudder post to 5 feet forward of the inner stern post and extending up on the former three feet, and upon the latter as far as the jacket; bolted through and through with $1\frac{1}{4}$-inch copper bolts. Similar plates connect the heads of the two posts. All the holes through the bottom for valves will be cut and searched and after the ship is launched and in the hands of the engineer. The builder's work ends with the machinery. If any pumps are required besides those specified, they will be furnished by the Company.

The carpenter is to finish the hull and joiner's work without extra charge on the contract, complete, with iron work attached, and the vessel to be delivered in the harbor adjacent the city of Boston.

The material and workmanship to be used in the construction of the foregoing vessel, to be of the best quality and character, and such as shall be satisfactory to the superintendent to be appointed by the American Steamship Company, and also so as to meet the requirements of French Lloyds, and other inspectors for insurance com-

panies in this country. The vessel is to be at the risk of the builder until safely launched and delivered to the American Steamship Company, or their agent, at any wharf in Boston that the latter may designate, and until completed. Insurance to be effected thereon by the builders, at their own cost, to an amount sufficient to cover payments which shall be made on the contract, from time to time, and with insurance companies satisfactory to the building committee of the Steamship Company. The policies to be made payable to the Treasurer of said Company, and deposited with him.

The vessel must be thoroughly completed, as contemplated by these Specifications, under a fair construction of them, essential omissions thereon (if any,) to be supplied by the builder; it being understood that the following will be excepted and furnished by the Steamship Company, viz., rails, boats, rigging, cables and anchors, water tanks and water casks, and vessel's furniture.